

AUTHORIZATION TO DISCHARGE UNDER THE
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM

In compliance with the provisions of the Federal Clean Water Act, as amended, (33 U.S.C. §§1251 et seq.; the "CWA") and the Massachusetts Clean Waters Act, as amended, (M.G.L. Chap. 21, §§26-53)

**East Fitchburg Wastewater Treatment Facility
City of Fitchburg Wastewater Commission**

is authorized to discharge from a facility located at

**Lanides Lane
Fitchburg, MA**

to receiving water named: **North Branch, Nashua River, a class B water,**

in accordance with effluent limitations, monitoring requirements and other conditions set forth herein.

This permit shall become effective on 60 days after signature.

This permit and the authorization to discharges **expire at midnight on September 30, 2005.**

This permit supersedes the permit issued on September 30, 1992.

This permit consists of (21) pages in Part I including effluent limitations, monitoring requirements, etc.; Attachment A, Freshwater Chronic Toxicity Test Procedure & Protocol; Attachment B, List of CSO Outfall; and Attachment C, Pretreatment Annual Report Instructions; ; and 35 pages in Part II including General Conditions and Definitions.

Signed this 18th day of September, 2002

/Signature on File/

Linda M. Murphy, Director
Office of Ecosystem Protection
Environmental Protection Agency
Boston, MA

Glenn Haas, Director
Division of Watershed Management
Massachusetts Department of Environmental
Protection
Boston, MA

PART I**A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS**

- 1.a During the period **May 1 through October 31** beginning the effective date and lasting through expiration, the permittee is authorized to discharge from outfall serial number 063 - Treated Wastewater Effluent. Such discharges shall be limited and monitored by the permittee as specified below.

<u>Effluent Characteristic</u>	<u>Units</u>	<u>Discharge Limitation</u>			<u>Monitoring Requirement</u>	
		<u>Average Monthly</u>	<u>Average Weekly</u>	<u>Maximum Daily</u>	<u>Measurement Frequently</u>	<u>Sample Type</u>
Flow	MGD	12.4 ¹	----	Report	Continuous ¹	Recorder
BOD ₅	mg/l	8	12	15	1/Day ²	24-Hour Composite ³
	lbs/day	830	1240	1550		
TSS	mg/l	10	15	20	1/Day ²	24-Hour Composite ³
	lbs/day	1030	1550	2070		
pH		(See Condition I.A.1.d. on Page 8)			1/Day	Grab
Dissolved Oxygen	mg/l	5 mg/l minimum			1/Day	Grab
Fecal Coliform Bacteria ⁴	cfu/100ml	200	----	400	3/Week	Grab
Total Residual Chlorine ^{5,10}	ug/l	23.8	----	41.0	3/Day	Grab
Total Residual Chlorine ^{5,10}	ug/l	Report	----	Report	Continuous	Recorder

Part I.A.1.a continued

<u>Effluent Characteristics</u>	<u>Units</u>	<u>Discharge Limitations</u>			<u>Monitoring Requirement</u>	
		<u>Average Monthly</u>	<u>Average Weekly</u>	<u>Maximum Daily</u>	<u>Measurement Frequently</u>	<u>Sample Type</u>
Total Ammonia Nitrogen, as N (June 1 to October 31)	mg/l	1.0	1.0	2.0	2/Week	24-Hour Composite ³
Total Ammonia Nitrogen, as N (May 1 to May 31)	mg/l	5.0	5.0	8.0	1/Week	24-Hour Composite ³
Copper, Total Recoverable ⁶	ug/l	13.95	--	20.16	1/Month	24-Hour Composite ³
Lead, Total Recoverable	ug/l	3.97	--	--	1/Quarter	24-Hr Composite ³
Aluminum, Total Recoverable	ug/l	Report	--	--	1/Month	24-Hr. Composite ³
Phosphorus, Total	mg/l	1.0	1.0	1.0	2/Week	24-Hour Composite ³
LC ₅₀ ⁷	%	----	----	>100	4/Year ⁸	24-Hour Composite ³
C-NOEC ⁹	%	----	----	>46	4/Year ⁸	24-Hour Composite ³

PART I**A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS**

- 1.b. During the period **November 1 through April 30** beginning the effective date and lasting through expiration, the permittee is authorized to discharge from outfall serial number 063 - Treated Wastewater Effluent. Such discharges shall be limited and monitored by the permittee as specified below.

<u>Effluent Characteristic</u>	<u>Units</u>	<u>Discharge Limitation</u>			<u>Monitoring Requirement</u>	
		<u>Average Monthly</u>	<u>Average Weekly</u>	<u>Maximum Daily</u>	<u>Measurement Frequency</u>	<u>Sample Type</u>
Flow	MGD	12.4 ¹	----	Report	Continuous ¹	Recorder
BOD ₅	mg/l	20	30	35	1/Day ²	24-Hour Composite ³
	lbs/day	2070	3100	3620		
TSS	mg/l	30	45	50	1/Day ²	24-Hour Composite ³
	lbs/day	3100	4650	5170		
pH		(See Condition I.A.1.d. on Page 8)			1/Day	Grab
Fecal Coliform Bacteria ⁴	cfu/100ml	200	----	400	1/Week	Grab
Total Residual Chlorine ^{5, 10}	ug/l	23.8	----	41.0	3/Day	Grab
Total Residual Chlorine ^{5,10}	ug/l	Report	----	Report	Continuous	Recorder

Part I.A.1.b continued

<u>Effluent Characteristic</u>	<u>Units</u>	<u>Discharge Limitation</u>			<u>Monitoring Requirement</u>	
		<u>Average Monthly</u>	<u>Average Weekly</u>	<u>Maximum Daily</u>	<u>Measurement Frequency</u>	<u>Sample Type</u>
Total Ammonia Nitrogen, as N	mg/l	Monitor	---	Monitor	1/Week	24-Hour Composite ³
Copper, Total Recoverable ⁶	ug/l	13.95	--	20.16	1/Month	24-Hour Composite ³
Lead, Total Recoverable	ug/l	3.97	--	--	1/Quarter	24-Hr Composite ³
Aluminum, Total Recoverable	ug/l	Report	--	--	1/Month	24-Hr. Composite ³
Phosphorus, Total	mg/l	Report	----	----	2/Week	24-Hour Composite ³
LC ₅₀ ⁷	%	----	----	>100	4/year ⁸	24-Hour Composite ³
C-NOEC ⁹	%	----	----	>46	4/year ⁸	24-Hour Composite ³

Footnotes:

1. For flow, report maximum and minimum daily rates and total flow for each operating date. This is an annual average limit, which shall be reported as a rolling average. The first value will be calculated using the monthly average flow for the first full month ending after the effective date of the permit and the eleven previous monthly average flows. Each subsequent month's DMR will report the annual average flow for the previous 12 months.
2. Sampling required for influent and effluent.
3. A 24-hour composite sample will consist of at least twenty four (24) grab samples taken during one working day.
4. Fecal coliform monitoring will be conducted year round. The grab sample shall be taken at the same time as the TRC sample. This is a State certification requirement. Fecal coliform discharges shall not exceed a monthly geometric mean of 200 cfu per 100 ml, nor shall they exceed a daily maximum of 400 cfu per 100 ml.
5. The minimum detection level (ML) for total residual chlorine is defined as 50 ug/l. This value is the minimum detection level for chlorine using EPA approved methods found in Standard Methods for the Examination of Water and Wastewater, the most currently approved Edition (see 40 CFR Part 136), Method 4500 CL-E and G, or USEPA Manual of Methods of Analysis of Water and Wastes, Method 330.5. One of these methods must be used to determine total residual chlorine. For effluent limitations less than 50 ug/l, compliance/non-compliance will be determined based on the ML. Sample results of 50 ug/l or less shall be reported as zero on the discharge monitoring report.
6. Values of copper shall be measured using the procedures outlined in Method 304, Electrothermal Atomic Absorption Spectrometry, of the most currently approved edition (see 40 CFR Part 136) Standard Methods For The Examination of Water and Wastewater.
7. The LC_{50} is the concentration of effluent which causes mortality to 50% of the test organisms. Therefore, a 100% limit means that a sample of 100% effluent (no dilution) shall cause no more than a 50% mortality rate.
- 8.. The permittee shall conduct chronic (and modified acute) toxicity tests four times per year. The chronic test may be used to calculate the acute LC_{50} at the 48 hour exposure interval. The permittee shall test the Ceriodaphnia dubia, and Pimephales promelas. Toxicity test samples shall be collected during the **second week of the months of March, June, September and December**. The test results shall be submitted by the last day of the month following the completion of the test. The results are **due April 30th, July 31st, October 31st, and January 31st**, respectively. The tests must be performed in accordance with test procedures and protocols specified in **Attachment A** of this permit.

Test Dates Second Tuesday in	Submit Results By:	Test Species	Acute Limit LC ₅₀	Chronic Limit C-NOEC
March June September December	April 30 th July 31 st October 31 st January 31 st	<u>Ceriodaphnia dubia</u> <u>Pimephales promelas</u> See Attachment A	≥ 100%	≥ 46%

After submitting four consecutive sets of WET test results, all of which demonstrate compliance with the WET permit limits, the permittee may request a reduction in the required WET testing. The permittee is required to continue testing at the frequency specified in the permit until notice is received by certified mail from the EPA that the WET testing requirement has been changed.

Synthetic, soft reconstituted water prepared in accordance with Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Water to Freshwater Organisms, Third Edition, P.A. Lewis et. al., July 1994, EPA/600/4-91/002 is authorized for use as dilution water in P. promelas tests. Alternate dilution water tests must include a minimum of two sets of controls; a site water and an alternate dilution water control.

9. C-NOEC (chronic-no observed effect concentration) is defined as the highest concentration of toxicant or effluent to which organisms are exposed in a life cycle or partial life cycle test which causes no adverse effect on growth, survival, or reproduction at a specific time of observation as determined from hypothesis testing where the test results exhibit a linear dose-response relationship. However, where the test results do not exhibit a linear dose-response relationship, the permittee must report the lowest concentration where there is no observable effect. The "46% or greater" limit is defined as a sample which is composed of 46% (or greater) effluent, the remainder being dilution water. This is a maximum daily limit derived as a percentage of the inverse of the dilution factor of 2.16.
10. The permittee shall collect and analyze a minimum of three grab samples per day for compliance purposes. Any additional grab sample monitoring results must be included in the compliance report. The results of the grab samples and a comparison to the continuous analyzer reading, including the time of the grab sample, shall be included with the monthly DMRs. The continuous recording charts shall also be included with the monthly DMRs.

A. 1 EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (CON'T.)

- c. The discharge shall not cause a violation of the water quality standards of the receiving water.
 - d. The pH of the effluent shall not be less than 6.5 nor greater than 8.3 at any time, unless these values are exceeded due to natural causes or as a result of the approved treatment process.
 - e. The discharge shall not cause objectionable discoloration of the receiving waters.
 - f. The effluent shall not contain a visible oil sheen, foam, or floating solids at any time.
 - g. The permittee's treatment facility shall maintain a minimum of 85 percent removal of both BOD₅ and TSS. The percent removal shall be based on monthly average values.
 - h. When the effluent discharged for a period of 90 consecutive days exceeds 80 percent of the 12.4 MGD design flow, the permittee shall submit to the permitting authorities a projection of loadings up to the time when the design capacity of the treatment facility will be reached, and a program for maintaining satisfactory treatment levels consistent with approved water quality management plans.
 - i. The permittee shall minimize the use of chlorine while maintaining adequate bacterial control.
2. All POTWs must provide adequate notice to the Director of the following:
- a. Any new introduction of pollutants into that POTW from an indirect discharge in a primary industry category discharging process water; and
 - b. Any substantial change in the volume or character of pollutants being introduced into that POTW by a source introducing pollutants into the POTW at the time of issuance of the permit.
 - c. For purposes of this paragraph, adequate notice shall include information on;
 - i. the quantity and quality of effluent introduced into the POTW; and
 - ii. any anticipated impact of the change on the quantity or quality of effluent be discharged from the POTW.
3. Prohibitions concerning interference and pass-through:
- a. Pollutants introduced into POTWs by a non-domestic source (user) shall not pass through the POTW or interfere with the operation or performance of the works.
 - b. If, within 30 days after notice of an interference or pass through violation has been

sent by EPA to the POTW and to persons or groups who have requested such notice, and the POTW fails to commence appropriate enforcement action to correct the violation, EPA make take appropriate enforcement action.

4. Toxics Control

- a. The permittee shall not discharge any pollutant or combination of pollutants in toxic amounts.
- b. Any toxic components of the effluent shall not result in any demonstrable harm to aquatic life or violate any state or federal water quality standard which has been or may be promulgated. Upon promulgation of any such standard, this permit may be revised or amended in accordance with such standards.

5. Numerical Effluent Limitations for Toxicants: EPA or DEP may use the results of the toxicity tests and chemical analyses conducted pursuant to this permit, as well as national water quality criteria developed pursuant to Section 304(a)(1) of the Clean Water Act, state water quality criteria, and any other appropriate information or data to develop numerical effluent limitations for any pollutants, including but not limited to those pollutants listed in Appendix D of 20 CFR part 22.

6. Phosphorus Loading Evaluation and Reduction Program :

- a. The permittee shall undertake the following steps during the duration of the permit to optimize reduction in phosphorus loading from the facility to the North Nashua River. The permittee is required to undertake the following:
 - i. **Within 12 months of the issuance of the permit**, the permittee shall implement a phosphorus monitoring program and complete a loading analysis sufficient to characterize loadings and sources of phosphorus into the facility as well as the facility's loadings to the North Nashua River; the evaluation shall be such that variations in loadings can be determined with a high degree of confidence; the results of this analysis should be submitted to the permit authorities within three months of the completion of the study.
 - ii. **Within 24 months of the issuance of the permit**, the permittee shall develop an optimization plan to provide maximum removal of phosphorus with the current facility with the possible alterations to treatment techniques (e.g. multiple dosing points for metal salt injection) and shall develop a program to minimize influent phosphorus loadings. The plan should be submitted to the regulatory agencies **within three months of completion** and implemented during the remaining time period of the permit.

B. INDUSTRIAL PRETREATMENT PROGRAM

1. Limitations for Industrial Users:

- a. Pollutants introduced into POTW's by a non-domestic source (user) shall not pass through the POTW or interfere with the operation or performance of the works.
- b. The permittee shall develop and enforce specific effluent limits (local limits) for Industrial User(s), and all other users, as appropriate, which together with appropriate changes in the POTW Treatment Plant's Facilities or operation, are necessary to ensure continued compliance with the POTW's NPDES permit or sludge use or disposal practices. Specific local limits shall not be developed and enforced without individual notice to persons or groups who have requested such notice and an opportunity to respond. **Within 90 days of the effective date of this permit**, the permittee shall prepare and submit a written technical report to EPA analyzing local limits. The report should, at a minimum, address EPA's comments outlined in EPA's letter to the permittee dated 10/24/96. The permittee has not responded to EPA's comment letter of 10/24/96 and must do so within the time frame outlined above. The Permittee shall carry out the local limits analysis in accordance with EPA Guidance Manual for the Development and Implementation of Local Discharge Limitations Under the Pretreatment Program (December, 1987).

2. Industrial Pretreatment Program

- a. The permittee shall implement the Industrial Pretreatment Program in accordance with the legal authorities, policies, procedures, and financial provisions described in the permittee's approved Pretreatment Program, and the General Pretreatment Regulations, 40 CFR 403. At a minimum, the permittee must perform the following duties to properly implement the Industrial Pretreatment Program (IPP):
 - i. Carry out inspection, surveillance, and monitoring procedures which will determine, independent of information supplied by the industrial user, whether the industrial user is in compliance with the Pretreatment Standards. At a minimum, all significant industrial users shall be sampled and inspected at the frequency established in the approved IPP but in no case less than once per year and maintain adequate records.
 - ii. Issue or renew all necessary industrial user control mechanisms within 90 days of their expiration date or within 180 days after the industry has been determined to be a significant industrial user.
 - iii. Obtain appropriate remedies for noncompliance by any industrial user with any pretreatment standard and/or requirement.

- iv Maintain an adequate revenue structure for continued implementation of the Pretreatment Program.
- b. The permittee shall provide the EPA and MA DEP with an annual report describing the permittee's pretreatment program activities for the twelve month period ending 60 days prior to the due date in accordance with 403.12(i). The annual report shall be consistent with the format described in Attachment C of this permit and shall be **submitted no later than October 1 of each year.**
- c. The permittee must obtain approval from EPA prior to making any significant changes to the industrial pretreatment program in accordance with 40 CFR 403.18(c).
- d. The permittee must assure that applicable National Categorical Pretreatment Standards are met by all categorical industrial users of the POTW. These standards are published in the Federal Regulations at 40 CFR 405 et. seq.
- e. The permittee must modify its pretreatment program to conform to all changes in the Federal Regulations that pertain to the implementation and enforcement of the industrial pretreatment program. The permittee must provide EPA, in writing, **within 365 days of this permit's effective date** proposed changes to the permittee's pretreatment program deemed necessary to assure conformity with current Federal Regulations. At a minimum, the permittee must address in its written submission the following areas: (1) Enforcement response plan; (2) revised sewer use ordinances; and (3) slug control evaluations. The permittee will implement these proposed changes pending EPA Region I's approval under 40 CFR 403.18. This submission is separate and distinct from any local limits analysis submission described in Part I.A.3.b.

C. COMBINED SEWER OVERFLOWS (CSOs)

1. EFFLUENT LIMITATIONS

- a. During wet weather, the permittee is authorized to discharge storm water/wastewater from combined sewer outfalls listed in Attachment B, subject to the following effluent limitations.
 - i. The discharges shall receive treatment at a level providing Best Practicable Control Technology Currently Available (BPT), Best Conventional Pollutant Control Technology (BCT) to control and abate conventional pollutants and Best Available Technology Economically Achievable (BAT) to control and abate non-conventional and toxic pollutants. The EPA has made a Best Professional Judgement (BPJ) determination that BPT, BCT, and BAT for combined sewer overflow (CSO) control include the implementation of Nine Minimum Controls (NMC) specified below and detailed further in Part I.F.2. "Nine Minimum Controls, Minimum Implementation Levels" of this permit:

1. Proper operation and regular maintenance programs for the sewer system and the combined sewer overflows.
2. Maximum use of the collection system for storage.
3. Review and modification of the pretreatment program to assure CSO impacts are minimized.
4. Maximization of flow to the POTW for treatment.
5. Prohibition of dry weather overflows from CSOs.
6. Control of solid and floatable materials in CSO.
7. Pollution prevention programs that focus on contaminant reduction activities.
8. Public notification to ensure that the public receives adequate notification of CSO occurrences and CSO impacts.
9. Monitoring to effectively characterize CSO impacts and the efficacy of CSO controls.

Implementation of these controls is required by the effective date of the permit. Documentation of the implementation of these controls has been submitted and is currently under review by EPA and the State. EPA and the State consider that approvable documentation must include the minimum requirements set forth in Part I.C.2 of this Permit and additional activities the permittee can reasonably undertake.

ii. The discharges shall not cause **or contribute to** violations of Federal or State Water Quality Standards.

2. Nine Minimum Controls, Minimum Implementation Levels

- a. The Permittee must implement the nine minimum controls in accordance with the documentation provided to EPA and MADEP or as subsequently modified to enhance the effectiveness of the controls. This implementation must include the following controls plus other controls the Permittee can reasonably implement as set forth in the documentation.
- b. Each CSO structure/regulator, pumping station and/or tidegate shall be routinely inspected, at a minimum of once per month, to insure that they are in good working condition and adjusted to minimize combined sewer discharges and tidal surcharging. (NMC # 1, 2 and 4). The following inspection results shall be recorded: the date and time of the inspection, the general condition of the facility, and whether the facility is operating satisfactorily. If maintenance is necessary, the permittee shall record: the description of the necessary maintenance, the date the necessary

maintenance was performed, and whether the observed problem was corrected. The permittee shall maintain all records of inspections for at least three years.

Annually, no later than January 15th, the permittee shall submit a certification to the State and EPA which states that the previous calendar year's monthly inspections were conducted, results recorded, and records maintained.

The State and EPA have the right to inspect any CSO related structure or outfall at any time without prior notification to the permittee.

- c. Discharges to the combined system of septage, holding tank wastes or other material which may cause a visible oil sheen or containing floatable material are prohibited during wet weather when CSO discharges may be active. (NMC# 3,6, and 7).
- d. Dry weather overflows (DWOs) are prohibited (NMC# 5). All dry weather sanitary and/or industrial discharges from CSOs must be reported to EPA and the State within 24 hours in accordance with the reporting requirements for plant bypass (Paragraph D.1.e of Part II of this permit).
- e. The permittee shall quantify and record all discharges from combined sewer outfalls (NMC# 9). Quantification may be through direct measurement or estimation. When estimating, the permittee shall make reasonable efforts, i.e. gaging, measurements, to verify the validity of the estimation technique. The following information must be recorded for each combined sewer outfall for each discharge event:
 - Estimated duration (hours) of discharge;
 - Estimated volume (gallons) of discharge; and
 - National Weather Service precipitation data from the nearest gage where precipitation is available at daily (24-hour) intervals and the nearest gage where precipitation is available at one-hour intervals. Cumulative precipitation per discharge event shall be calculated.

The permittee shall maintain all records of discharges for at least six years after the effective date of this permit.

Annually, no later than January 15th, the permittee shall submit a certification to the State and EPA which states that the all discharges from combined sewer outfalls were recorded, and records maintained for the previous calendar year.

- f. The permittee shall install and maintain identification signs for all combined sewer outfall structures (NMC# 8) The signs must be located at or near the combined sewer outfall structures and easily readable by the public. These signs shall be a minimum of 12 x 18 inches in size, with white lettering against a green background, and shall contain the following information:

CITY OF FITCHBURG
WET WEATHER

SEWAGE DISCHARGE
OUTFALL (discharge serial number)

D. UNAUTHORIZED DISCHARGES

The permittee is authorized to discharge from POTW outfall 063 and from CSO outfalls listed in Attachment B in accordance with terms and conditions of this permit. Discharges of wastewater from any other point sources, including sanitary sewer overflows (SSOs) are not authorized by this permit and shall be reported in accordance with Section D.1.e (1) of the General Requirements of this permit.

E. OPERATION AND MAINTENANCE OF THE SEWER SYSTEM

Operation and maintenance of the sewer system shall be in compliance with the General Requirements of Part II and the following terms and conditions:

1. Maintenance Staff: The permittee shall provide an adequate staff to carry out the operation, maintenance, repair, and testing functions required to ensure compliance with the terms and conditions of this permit.

2. Infiltration/Inflow

The permittee shall develop and implement a plan to control infiltration and inflow to the separate sewer system. The plan shall be submitted to EPA and MA DEP within one year of the effective date of the permit. The plan shall address, at a minimum:

- elimination of high flow related effluent limit violations and all high flow-related unauthorized discharges of wastewater (to the District's system).
- a prioritized removal of public and private inflow sources that are upstream from, and potentially contribute to, known areas of sewer system backups and/or overflows, taking into account the health and environmental impacts of such overflows or backups.
- development of a formal written infiltration and inflow removal program with defined funding sources.
- an ongoing program of internal pipeline and manhole inspections designed to provide an understanding of the sewerage system, identify significant I/I sources, identify all potential and actual unauthorized discharges of sanitary sewage, and identify/prioritize areas that will provide increased aquifer recharge as the result of reduction/elimination of infiltration to the system
- development and implementation of a private source identification and control program focusing on the re-direction of sump pumps and disconnection/re-direction of roof downspouts. The permittee should target distribution of public education

materials prior to and during projects to remove private inflow sources and rehabilitate/replace sewer service connections as an integral part of local public works projects for roadway construction and utility improvement.

- an ongoing preventive maintenance program designed to avoid high flow related effluent limit violations and unauthorized discharges due to malfunctions or failures of the sewer system infrastructure.
- development and implementation of an educational public outreach program for all aspects of I/I control, particularly private inflow.

A summary report of all actions taken to minimize I/I by the permittee during the previous calendar year shall be submitted to EPA and the MA DEP by **February 28th of each year**. The summary report shall include:

- a map of the sewer system with priority areas identified.
 - a graph of flows to the treatment plant during the year and an analysis of I/I trends (i.e. is I/I being reduced?)
 - a description of inspection and maintenance activities conducted and progress made relative to priority areas.
 - an accounting of I/I related expenditures.
 - a report of unauthorized discharges (from the permittee's portion of the collection system) during the previous calendar year which were caused by inadequate sewer system capacity, excessive I/I and operational/maintenance problems including a status of action items necessary to eliminate the discharges. The information reported shall include the date, location, duration and volume of discharge as well as the cause of the overflow and the receiving water.
3. Alternative Power Source: In order to maintain compliance with the terms and condition of this permit, the permittee shall continue to provide an alternative power source with which to sufficiently operate its treatment works (as defined at 40 CFR §122.2).

F. SLUDGE CONDITIONS

1. Standard Conditions

- a. The permittee shall comply with all existing federal and state laws and regulations that apply to sewage sludge use and disposal practices and the Clean Water Act § 405(d) technical standards.
- b. The permittee shall comply with the more stringent of either the state or federal requirements.

- c. No person shall fire sewage sludge in a sewage sludge incinerator except in compliance with the requirements of 40 CFR part 503 subpart E.

2. Pollutant Limitations

- a. Firing of sewage sludge shall not violate the requirements of the national Emission Standard for beryllium in 40 CFR part 61, subpart C - 10 grams per 24 hour period.
- b. Firing of sewage sludge shall not violate the requirements in the National Emission Standard for mercury in 40 CFR part 61, subpart E - 3200 grams per 24 hour period.
- c. The daily concentration of the metals in the sewage sludge fed to the incinerator shall not exceed the limits specified below (dry weight basis):

	<u>Maximum Daily</u>
Arsenic.....	301.6 mg/kg
Cadmium.....	212.6 mg/kg
Chromium.....	1.8x10 ⁴ mg/kg
Lead.....	8,459 mg/kg
Nickel.....	3.8 x 10 ⁴ mg/kg

3. Operational Standards

- a. The exit gas from the sewage sludge incinerator stack shall be monitored continuously for carbon monoxide.
- b. The monthly average concentration of carbon monoxide in the exit gas from the sewage sludge incinerator, corrected for zero percent moisture and to seven percent oxygen, does not exceed - 100 ppm on a volumetric basis
- c. The CO concentration shall be corrected to zero percent moisture using the correction factor below:

$$\text{Correction factor} = \frac{1}{(1-X)}$$

Where : X = decimal fraction of the percent moisture in the sewage sludge incinerator exit gas in hundreths.

- d. The measured CO concentration shall be corrected to seven percent oxygen using the correction factor below:

$$\text{Correction factor} = \frac{14}{(21-Y)}$$

Where: Y = percent oxygen concentration in the sewage sludge incinerator stack exit gas (dry volume/dry volume).

- e. The measured CO value shall be multiplied by the correction factors in items c and d. The corrected CO value shall be used to determine compliance with paragraph b.

4. Management Practices

- a. An instrument that continuously measures and records the carbon monoxide concentration in the sewage sludge incinerator stack exit gas shall be installed, calibrated, operated and maintained for the incinerator.
- b. An instrument that continuously measures and records the oxygen concentration in the sewage sludge incinerator stack exit gas shall be installed, calibrated, operated and maintained for the incinerator.
- c. An instrument that continuously measures and records combustion temperatures shall be installed, calibrated operated and maintained for the incinerator.
- d. Operation of the incinerator shall not cause the operating combustion temperature for the incinerator to exceed the performance test combustion temperature by more than 20 percent.
- f. Any air pollution control devices shall be appropriate for the type of incinerator and operating parameters for the air pollution control device shall be adequate to indicate proper performance of the air pollution control device. For incinerators subject to the requirements of 40 CFR subpart O, operation of the air pollution control device shall not violate the air pollution control device requirements of that part.
- g. Sewage sludge shall not be fired in an incinerator if it is likely to adversely affect a threatened or endangered species listed under section 4 of the Endangered Species Act or its designated critical habitat.
- h. The permittee shall notify the EPA and DEP if any continuous emission monitoring equipment is shut down or broken down for more that 72 hours while the incinerator continues to operate.

- i. Notification shall include the following:
 - i. The reason for the shut down or break down;
 - ii. Steps taken to restore the system;
 - iii. Expected length of the down time; and
 - iv. The expected length of the incinerator operation during the down time of the monitoring system.
- j. Break downs or shut downs of less than 72 hours shall be recorded in the operations log along with an explanation of the event.
- k. Copies of all manufacturer's instructions shall be kept on file and be available during inspections.

5. Monitoring Frequency

- a. The frequency of monitoring beryllium shall be as required in 40 CFR part 61, subpart C.
- b. The frequency of monitoring for mercury shall be as required in 40 CFR part 61, subpart E.
- c. The pollutants in paragraph F.2.c shall be monitored at the following frequency - 1/month.
- d. After the sewage sludge has been monitored for the pollutants in paragraph F.2.c for two years at the frequency specified above, the permittee may request a reduction in the monitoring frequency.
- e. The operating parameters for the air pollution control devices shall be monitored at the following frequency - 1/day.
- f. The CO concentration in the exit gas, the oxygen concentration in the exit gas, information from the instrument used to determine moisture content, and combustion temperatures shall be monitored at the following frequency - continuously.

6. Sampling and Analysis

- a. The sewage shall be sampled at a location which is prior to entering the incinerator and provides a representative sample of the sewage sludge being incinerated.
- b. The methane in the sewage sludge shall be analyzed using "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", EPA publication SW-846, Second Edition (1982) with Updates I (April 1984) and II (April 1985) and Third Edition (November 1986) with Revision I (December 1987).

- c. If emission testing is done for demonstration of NESHAPS, testing shall be in accordance with Method 101A in 40 CFR part 60, Appendix B, "Determination of Particulate and Gaseous Mercury Emissions from Sewage Sludge Incinerators".
- d. Sewage sludge samples for mercury shall be sampled and analyzed using Method 105 in 40 CFR part 61, Appendix B, "Determination of Mercury in Wastewater Treatment Plant Sewage Sludge".

7. Record Keeping Requirements

- a. The concentrations of the pollutants in paragraph F.2, report the maximum value of each pollutant.
- b. The CO concentration in the exit gas from the incinerator stack. Report the average monthly concentration.
- c. Information that demonstrates compliance with the National Emission Standard for beryllium.
- d. Information that demonstrates compliance with the National Emission Standard for mercury. If sludge sampling is used, include calculation for compliance demonstration.
- e. The operating combustion temperature for the sewage sludge incinerator.
- f. Values for the air pollution control devices operating parameters. Report average monthly values.
- g. The oxygen concentration and the information used to measure moisture content in the exit gas from the sewage sludge incinerator. Report the oxygen concentration and percent moisture results which were used to determine the CO values reported in paragraph F.5.f.
- h. The sewage sludge feed rate to the incinerator. Record the average daily and average monthly feed rate.
- i. The stack height of the incinerator.
- j. The dispersion factor for the site where the incinerator is located.
- k. The control efficiency for arsenic, lead, chromium, cadmium and nickel.
- l. A calibration and maintenance log for the instruments used to measure the CO and the oxygen concentration in the exit gas; the information needed to determine moisture content in the exit gas, and the combustion temperatures.

8. Reporting

The permittee shall report the information in paragraphs F.1 through F.7 **annually by February 19.**

G. RE-OPENER CLAUSE

EPA may re-open and modify the permit to implement the recommendation of the report of the Water Quality Model for Nashua Watershed Basin.

H. MONITORING AND REPORTING

Monitoring results obtained during the previous month shall be summarized for each month and reported on separate Discharge Monitoring Report forms postmarked **no later than the 15th day of the month following the effective date of the permit.**

Signed and dated originals of these, and all other reports required herein, shall be submitted to the Director and the State at the following addresses:

Environmental Protection Agency
Water Technical Unit (SEW)
P.O. Box 8127
Boston, Massachusetts 02114

The state agency is:

Massachusetts Department of Environmental Protection
Bureau of Waste Prevention
Central Regional Office
627 Main Street
Worcester, Massachusetts 01608

Signed and dated Discharge Monitoring Report Forms and toxicity test reports required by this permit shall also be submitted to the state at:

Massachusetts Department of Environmental Protection
Division of Watershed Management
Surface Water Discharge Permit Program
627 Main Street, 2nd Floor
Worcester, Massachusetts 01608

I. STATE PERMIT CONDITIONS

This discharge permit is issued jointly by the U.S. Environmental Protection Agency (EPA) and the Massachusetts Department of Environmental Protection (DEP) under federal and state law, respectively. As such, all the terms and conditions of this permit are hereby incorporated into and constitute a discharge permit issued by the Commissioner of the MA DEP pursuant to M.G.L. Chap. 21 §43.

Each agency shall have the independent right to enforce the terms and conditions of this permit. Any modification, suspension or revocation of this permit shall be effective only with respect to the agency taking such action, and shall not affect the validity or status of this permit as issued by the other agency, unless and until each agency has concurred in writing with such modification, suspension, or revocation. In the event any portion of this permit is declared invalid, illegal or otherwise issued in violation of state law such permit shall remain in full force and effect under federal law as an NPDES permit issued by the U.S. Environmental Protection Agency. In the event this permit is declared invalid, illegal or otherwise issued in violation of federal law, this permit shall remain in full force and effect under state law as a permit issued by the Commonwealth of Massachusetts.